In the claims

1.(currently amended) A method of reducing calculations in the decoding of a M-ary modulated convolutionally coded signal in a radio communication system, the method comprising the steps of:

a) determining a single function for a soft-decision metric for each bit in a symbol by restricting ~~the~~ a set of all possible Gray-coded constellation points to those closest to a boundary between a bit value of 0 and 1 for each bit in ~~the~~ an input symbol and applying a predetermined function corresponding to ~~the~~ a range of restricted constellation points to ~~the~~ an entire possible range of symbols;

b) inputting ~~a~~ the symbol ~~having real part, x, and an imaginary part, y~~;

c) setting ~~a~~ the soft-decision metric for each bit in the symbol using the predetermined function from the determining step;

d) outputting the soft-decision metrics for each bit of the symbol to a turbo decoder;

e) decoding the symbol in the turbo decoder; and

f) repeating steps a) through e) until all symbols to be input are decoded.

2. (original) The method of claim 1, wherein the setting step includes a substep of scaling the soft-decision metrics.

3. (currently amended) The method of claim 2, wherein the scaling substep includes scaling the soft-decision metrics by a factor of $\beta A_d / A_p$, wherein β is the squared magnitude of a filtered pilot signal, and A_d and A_p are the data and pilot signal gains, respectively.

4. (currently amended) The method of claim 1, wherein the predetermined function of the determining step is defined by the difference between ~~the~~ squares of the distances between the set of all possible Gray-coded restricted constellation points

having 0 and 1 bit values and a hypothetical symbol falling within the range of restricted constellation points.

5.(Cancelled)

6.(currently amended) The method of claim 8, wherein the inputting step includes phase shifting the symbol by $e^{j\pi/8}$.

7. (Cancelled)

8.(Currently Amended) A method of reducing calculations in the decoding of an 8-PSK modulated convolutionally coded signal in a radio communication system, the method comprising the steps of:

a) providing a set of eight possible Gray-coded symbols for the 8-PSK modulated convolutionally coded signal in a constellation;

b) defining radial boundaries in ~~the a~~ the constellation ~~bisecting the points in the constellation~~;

c) inputting a symbol ~~having real part, x, and an imaginary part, y~~;

d) plotting the location of the symbol in the constellation;

e) locating ~~the~~ two nearest constellation points to the symbol having a 0 value and a 1 value for each bit;

f) setting a soft-decision metric for each bit using the two nearest constellation points from the locating step;

g) outputting ~~the~~ the soft-decision ~~metrics~~ metric for each bit of the symbol to a turbo decoder;

h) decoding the symbol in the turbo decoder;

i) repeating steps a) through h) until all symbols to be input are decoded;

wherein ~~after~~ the setting ~~steps~~, further ~~comprising~~ comprises the step of scaling the soft-decision ~~metrics~~, and

wherein the scaling step includes scaling the soft-decision ~~metrics~~ by a factor of $\beta A_d / A_p$, wherein β is ~~the~~ a squared magnitude of a filtered pilot signal, and A_d and A_p are ~~the~~ data and pilot signal gains, respectively.

9. (original) A method of reducing calculations in the decoding of an 8-PSK modulated convolutionally coded signal in a radio communication system, the method comprising the steps of:

a) inputting a symbol having real part, x, and an imaginary part, y;

b) setting a soft-decision metric of ~~the~~ a first bit of the symbol equal to the value of the imaginary part, y, of the symbol;

c) setting a soft-decision metric of ~~the~~ a second bit of the symbol equal to the value of the real part, x, of the symbol;

d) setting a soft-decision metric of ~~the~~ a third bit of the symbol equal to

$$(|x|-|y|)\frac{1}{\sqrt{2}}$$

e) outputting the soft-decision metrics ~~for each bit~~ of the first, second and third bits of the symbol to a turbo decoder;

f) decoding the symbol in the turbo decoder; and

g) repeating steps a) through f) until all symbols to be input are decoded.

10. (currently amended) The method of claim ~~1~~9, wherein the inputting step includes phase shifting the symbol by $e^{j\pi/8}$.